

Appl. No. : 10/028,451
Filed : October 22, 2001

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims.

1. (Currently Amended) An exercise trainer to provide exercise movement to a user comprising:

a first crank arm and a second crank arm oriented at an angular distance from the other;

a first foot link connected to said first crank arm and a second foot link connected to said second crank arm;

foot pedals supported on said foot links for relative movement with respect to said foot links;

a bearing support for said foot links at a point removed from said first and second crank arms to which said first and second foot links are supported for sliding reciprocating movement;

a connection between a grounded point and said foot pedals interconnected with said foot links to provide relative horizontal movement ~~as to the ground~~ of said foot pedals at least twice the length of each respective crank arm; and,

a seat mounted on said trainer to provide for a user sitting on said trainer and placing the user's feet on said foot pedals for exercise movement.

2. (Original) The exercise trainer as claimed in Claim 1 further comprising:

said connection is of a length to provide a movement of said foot pedals in the outline of a modified ellipse.

3. (Original) The exercise trainer as claimed in Claim 1 further comprising:

said connection provides movement of said foot pedals of at least twice the crank length upon 90° of movement of the crank arm and at least four times the distance upon 180° of movement of the crank arm.

4. (Original) The exercise trainer as claimed in Claim 1 wherein:

said connection comprises a flexible member connected to said foot link by one or more pulleys around which said flexible member is placed at a point removed from the foot pedal.

5. (Original) The exercise trainer as claimed in Claim 1 further comprising:

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said first and second crank arms being connected to a motor for driving said crank arms at a given speed.

6. (Original) The exercise trainer as claimed in Claim 5 further comprising:
a controller which limits the speed of said motor to provide a load beyond said speed to the crank arms and connected foot pedals.

7. (Original) The exercise trainer as claimed in Claim 5 further comprising:
a motor and control for raising and lowering said seat with respect to said foot pedals.

8. (Currently Amended) An exercise trainer with a leg movement multiplier and a seat comprising:

a base;
first and second crank arms rotationally supported angularly apart on said base;
first and second foot links connected respectively to said first and second crank arms at one end and supported for sliding movement distally from said crank arms;
first and second foot pedals respectively supported for longitudinal movement on said first and second foot links;
a connection between said foot pedals and a ground connection on said base and interconnected with said foot links so that said foot links when moved in supported relationship with said crank arms provide for a degenerated horizontal elliptical movement of said foot pedals ~~with respect to ground~~ greater than twice the length of its respective crank arm; and,

a seat mounted on said base having a height adjustment with respect to the foot pedals.

9. (Original) The exercise trainer as claimed in Claim 8 further comprising:
said connection being a flexible member supported on a pulley to the rearward of said foot pedal and a pulley forward of said foot pedal.

10. (Original) The exercise trainer as claimed in Claim 8 wherein:
said crank arms are connected to a motor for providing rotational movement of said crank arms.

11. (Original) The exercise trainer as claimed in Claim 10 further comprising:

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a motor controller for controlling the speed of said motor for positive drive of said pedals and alternatively providing a load on said pedals.

12. (Currently Amended) An exercise trainer comprising:

a base;

a first and second crank arm angularly apart from each other mounted on said base;

a motor connected to said crank arms for driving said crank arms;

first and second foot links respectively connected to said first and second crank arms;

a bearing surface mounted on said base removed from said connection of said foot links to said crank arms providing reciprocal movement of said foot links;

a foot pedal mounted on each of said foot links having a bearing surface which engages said foot links for reciprocal movement with respect to said foot links;

a linkage between said foot pedals and said foot links;

a securement for securing said linkage to a fixed portion on said base to provide relative horizontal movement of said foot pedals ~~with respect to ground~~ greater than twice the length of a crank arm, and in a degenerated elliptical path; and,

a seat mounted for movement by a motor up and down with respect to said foot pedals in order to raise and lower a user with respect to said foot pedals.

13. (Currently Amended) The exercise trainer as claimed in Claim 12 further comprising:

said mechanical linkage comprising a flexible member connected to said foot pedal and to said foot link; and,

a controller for controlling the speed of said motor connected to said crank arms and the elevation of said seat.

14. (Original) The exercise trainer as claimed in Claim 12 further comprising:

a rotational mounting for said seat for causing said seat to turn on its mounting toward the side of said trainer.

15. (Currently Amended) An exercise trainer comprising:

a first and second foot link connected and supported for opposing reciprocal movement;

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a support for said foot links providing a bearing surface for reciprocal movement and support so as to allow said foot links to reciprocate;

a first foot pedal mounted on said first foot link and a second foot pedal mounted on said second foot link;

a connecting member connected between said foot link and said foot pedal;

a base with a ground connection connecting said base connected to said
connecting member to assist movement of said foot pedals on said foot link in a modified elliptical path;

a seat mounted on said exerciser for raised and lowered placement with respect to said pedals; and,

a motor for driving said foot pedals.

16. (Original) The exercise trainer as claimed in Claim 15 further comprising:

a controller for controlling the movement of said motor to provide a drive or a retarding movement of said foot pedals with respect to a user's movements.

17. (Original) The exercise trainer as claimed in Claim 15 further comprising:

a motor connected to said seat having a linkage to raise and lower said seat; and,
a controller for controlling said motor to raise and lower said seat to a desired height.

18. (Original) The exercise trainer as claimed in Claim 15 further comprising:

a controller which sets the speed of said motor to provide a given speed of said pedals under positive drive and a retarding force when a user exceeds the given speed.

19. (Original) An exercise trainer having a seat comprising:

a first and second crank arm having a common axis supported on a frame with a base, said first and second crank arm being angularly displaced from each other;

a first foot link and a second foot link respectively supported on said first crank arm and said second crank arm;

a support for supporting said foot links removed from said first and second crank arm supports for reciprocal movement as said cranks are turned;

a first foot pedal on said first foot link and a second foot pedal on said second foot link supported for reciprocal movement on said foot link;

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a linkage between said foot pedal and said foot link and a fixed portion of said frame to provide reciprocal movement of said foot pedals through a degenerated ellipse having its major axis greater than the length of the crank arm to which it is supported;

a seat mounted on said exercise trainer having an adjustable seat mounting for moving said seat as to its distance with respect to said first and second foot pedals; and,

a motor connected to said seat for adjusting the distance of said seat with respect to said pedals.

20. (Original) The exercise trainer as claimed in Claim 19 further comprising:

 said linkage being formed as a flexible member wrapped at either end around a pulley and connected to said foot link.

21. (Original) The exercise trainer as claimed in Claim 20 further comprising:

 a controller for controlling the height of said seat.

22. (Original) The exercise trainer as claimed in Claim 19 further comprising:

 a motor connected to said crank arms; and,

 a controller for controlling the speed of said motor.

23. (Original) The exercise trainer as claimed in Claim 22 further comprising:

 said controller having a control for controlling the speed of said motor at a setpoint to supplement or retard movement by a user.

24. (Currently Amended) An exercise trainer having a seat comprising:

a motor and a seat positioned generally vertically higher than said motor;

 a first crank arm and a second crank arm angularly offset from each other connected to [[a]] said motor for rotational movement;

 a first foot link connected to said first crank arm and a second foot link connected to said second crank arm;

 a first foot receiving member and a second foot receiving member respectively connected for movement on said first foot link and said second foot link;

 a linkage between said first foot link and said foot receiving member interconnecting them, a linkage between said second foot link and said foot receiving member, both of said linkages connected to a ground point so that said foot links when reciprocated cause said foot receiving members to reciprocally move on said foot links in relative displacement with respect to said ground; and,

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a controller for controlling the speed of said motor and the attendant speed of said crank arms.

25. (Original) The exerciser as claimed in Claim 24 further comprising:
said controller having a circuit for setting the speed of said motor at a given speed
of movement for a user, and which can retard the movement of a user above a set speed
and supplements the movement of a user below the set speed.

26. (Original) The exercise trainer as claimed in Claim 25 wherein:
the controls for said motor and the seat height are on a panel of said exerciser.

27. (Original) The exercise trainer as claimed in Claim 26 wherein:
said seat is mounted for pivoting on its axis to the side of said trainer.